

## **In the Specification**

1. Please replace the paragraph under the "Claim of Priority" section with the following amended paragraph:

This patent application claims priority from U.S. Provisional Patent Application No. 60/445,805, filed on February 7, ~~[[2002]]~~ 2003.

2. Please replace the first paragraph under the "Background of the Invention" section with the following amended paragraph:

Quantum key distribution involves establishing a key between a sender ("Alice") and a receiver ("Bob") by using weak (e.g., 0.1 photon on average) optical signals transmitted over a "quantum channel." The security of the key distribution is based on the quantum mechanical ~~[[principal]]~~ principle that any measurement of a quantum system in unknown state will modify its state. As a consequence, an eavesdropper ("Eve") that attempts to intercept or otherwise measure the quantum signal will introduce errors into the transmitted signals, thereby revealing her presence.

3. Please replace the second paragraph on page 9 with the following amended paragraph

3. WDD 286 be calibrated to ensure that  $\mu$  is constant~~[[;]]~~ and well-defined;

4. Please replace the first paragraph under the sub-heading "Alice and Bob Detector Self-Calibration" with the following amended paragraph:

A key aspect of maintaining the physical security of system 200 is the ability to separately adjust and calibrate Alice and Bob. Both Alice and Bob are preferably capable of choosing  $\mu$  independently, without using photons sent through the ~~[[insecure]]~~ unsecure optical line. Otherwise, the eavesdropper can change the intensity of the pulses (amplify, substitute, etc.), thereby adulterating

the calibration of the nodes and using the pulses for malicious purposes (e.g., increase the power of the probing pulses, or force Alice to use an insecure value of the average number of photons per pulse  $\mu$ ).